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LOOKING FORWARD IN OKLAHOMA AGRICULTURE

- - - A Summary

Looking Forward in Oklahoma Agriculture, which is summarized here, was prepared by representatives of the farm press and the following State and Federal agencies:

Oklahoma Planning and Resources Board.
Oklahoma State Department of Agriculture.
Oklahoma State Department of Vocational Education.
Oklahoma State Health Department.
Oklahoma State Department of Public Welfare.
Agricultural Extension Service, Oklahoma A. and M. College.
Agricultural Experiment Station, Oklahoma A. and M. College.
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The Farmer-Stockman.
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Rural Electrification Administration, U. S. D. A.
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A copy of Bulletin B-299, *Looking Forward in Oklahoma Agriculture,* which is summarized in this circular, may be obtained free of charge by addressing: Director, Agricultural Experiment station, Oklahoma A. and M. College, Stillwater, Okla.

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Looking Forward In Oklahoma Agriculture

——A Summary

Representatives of State and Federal agencies which work with farmers in Oklahoma have felt the need for an inventory of agricultural resources and an analysis of major aspects of the farming industry and rural life in the State. LOOKING FORWARD IN OKLAHOMA AGRICULTURE was prepared to meet that need.

LOOKING FORWARD IN OKLAHOMA AGRICULTURE presents factual information about the agriculture of Oklahoma, and suggests some possibilities for the future. These possibilities are not put forward as a plan, but as opportunities which await development. They are presented in the faith that the people of Oklahoma will work together to choose and achieve their goals. LOOKING FORWARD IN OKLAHOMA AGRICULTURE cannot be regarded as "of and by" farmers, for farmers did not prepare it; but a committee of successful Oklahoma farmers* did give the benefit of their judgment and counsel to those who assembled and analyzed the material.

Agricultural and Industrial Development

Natural resources and cheap fuel invite extensive industrial development in Oklahoma. Any expansion of industry would assist the State's agriculture significantly by increasing the consumer outlets for food and fiber. Industry based on agricultural raw materials would also provide a market for the products from otherwise surplus acres and, because it is a heavy user of labor, would be especially valuable in providing steady demand at good prices for the farm's more traditional products.

Sound agricultural-industrial development can come only through the enterprise of each community and its surrounding rural trade area. The first step is a survey to provide facts about local resources and opportunities. Then individual enterprisers, or groups of farmers and businessmen, can put their

* Members of this committee were: John Pat Carpenter, Red Rock; Carl Craddock, Pawhuska; Glenn E. Dill, Okemah; F. G. Drummond, Hominy; Homer Duffy, Lexington; W. A. Grisso, Seminole; Lyle Hague, Cherokee; Joe Hastings, Perkins; Verne L. Hughes, Drummond; E. G. Jeffrey, El Reno; Roscoe Kieffer, Helena; C. C. Miller, Elk City; L. H. Pechacek, Prague; Clarence Reeds, Wheatland; J. O. Selman, Woodward; H. L. Smith, Bixby; John Taylor, Mountain View; L. C. Westfahl, Okeene; and Mort Woods, Ardmore.

capital to work to produce profits for themselves, jobs for the community's people, and a profitable outlet for farm products from the surrounding area.

Low cost per unit of output is essential for success in all phases of agricultural-industrial enterprise. On the commercial farm, this means a relatively large unit of land with sufficient capital for equipment and operating expenses. Other essentials for successful agricultural-industrial development include elimination of all types of monopoly restrictions on output; increased production of low-cost electric power; provision of efficient, well paid labor; availability of low-cost transportation; continuous research on problems of management and production; and increased "industry mindedness" among all Oklahoma people, urban and rural.

Production Opportunities

Adjustment of crops and livestock to the highly varied land, water, timber and grass resources of the State is already well advanced, as evidenced by the greatly increased production achieved by Oklahoma farmers in the war years. However, opportunity remains for further adjusting land and farm facilities to their best possible use. The job is far from completed, and never will be fully done; but remarkable progress has been made.

This section of LOOKING FORWARD IN OKLAHOMA AGRICULTURE reports an attempt to estimate the production opportunities in Oklahoma agriculture in a "typical" postwar period. The year 1950 was chosen to represent such a time. Full employment was assumed.* An effort was made to estimate the probable effects of improved practices likely to be adopted by 1950. These, especially the maintenance or improvement of soil productivity, will be important in determining crop and livestock production in coming years. However, the actual extent to which efficiency of farm production in Oklahoma can be increased by use of improved practices depends on many factors, not the least of which is the inducement offered by economic conditions.

Much basic information on Oklahoma agriculture was developed as a by-product of the effort to estimate production

* The probable situation with seven million unemployed was also calculated. The results indicated that, although the general price level would be lower, the prices of Oklahoma farm products *with relation to each other* would be so little changed that relative acreages of different crops, and numbers of different kinds of livestock, would be only slightly affected.

opportunities. This information is too extensive and detailed for summary here, but is given in statistical form in the complete publication.

CROPS.

Wheat is expected to continue as the State's most important single crop in acreage and income. On much of the land especially adapted to wheat, no other crop uses the production facilities as efficiently or provides comparable money returns. Varieties giving high yield and test weight are already widely used. Varieties giving higher milling and baking quality would be more commonly planted if sufficient price premium were paid. Moisture saving practices would help increase yields in dry years.*

Cotton is expected to stay at about the 1944 acreage. Widespread use of successful mechanical harvesters will assist in maintaining cotton acreage. Yields in eastern Oklahoma could be increased by fertilization, use of improved varieties, pure seed, and treatment of seed for disease control. In western counties, varieties giving better grade and staple would be grown if price differentials were adjusted to favor "inch" cottons.

Peanuts can be continued on many farms in the southern and eastern areas, but any expansion of the total state acreage is unlikely. Individual farms having large areas of suitable soils might specialize on this crop by using mechanized equipment. Care must be taken to prevent erosion after harvest.

Broomcorn acreage appears adequate for probable demand, and most growers already use the best known practices. Some opportunity exists for a system of insuring more adequate seed supplies.

Truck crops, including Irish and sweet potatoes, in general will respond to more use of fertilizer, use of high quality plants or seed of adapted varieties, supplemental irrigation, and maintenance of soil organic matter and nitrogen. Commercial acreage of sweet potatoes will increase if efforts to develop their use for livestock feed and starch are successful.

Feed grains to take care of the anticipated increase in livestock can be produced without expansion of acreage by using improved varieties and better production practices.

* Production practices mentioned in this and following sections on crops and livestock are those taken into account in calculating the 1950 figures used in *Looking Forward in Oklahoma Agriculture.* More thorough discussion of production practices is available in numerous state and federal publications.

Corn yields per acre can be increased by use of adapted hybrid varieties, and fertilization where needed. On uplands and in the more western counties, small grains and sorghums will make more feed per acre. *Sorghum* yields could be increased by seed treatment and use of disease-resistant strains. Acreage will vary with weather conditions because sorghums are often used as a catch crop. More combine varieties are likely to be planted in the future. *Small grains* (oats, barley, and rye) are almost entirely grown for home feeding. Oat acreage for feed could be increased slightly in eastern and central Oklahoma, and a somewhat larger acreage of rye could be used as a winter pasture. Yields can be increased by a combination of thinner seeding, better seedbed preparation, and use of fall-sown oat varieties and intermediate-type barleys.

Alfalfa hay acreage could be increased throughout the State to provide more legume feed. Phosphate and lime would increase yields on many fields. In the western counties, more could be harvested for seed and some sorghum acreage could be replaced by alfalfa.

Other hay crops would also benefit from lime and phosphate in eastern Oklahoma. Improved seeding methods will insure more adequate stands. Weed control, resting to allow reseeding, and non-burning, will improve native meadows.

Pasture improvement is essential. The State's total acreage need not be greatly different, but the proportion in eastern Oklahoma could be increased. Pastures can be substantially improved through desirable grass seedings, fertilization, and better management (such as mowing for brush and weed control, and avoidance of over-grazing). More legumes are needed in pasture mixtures, for soil fertility and for mineral in feed. Supplemental pastures, properly handled, could provide twice as much temporary grazing as at present.

Minor crops can often be developed as profitable enterprises for individual farms or small areas, but make only a slight percentage difference in total use of land.

LIVESTOCK.

Livestock and poultry will return an increasing fraction of the farm income in Oklahoma in the future. For all livestock and poultry, better breeding stock and improved disease and parasite control would increase production rates. The wartime acreages of feed crops, with improved production methods, will return ample feed and forage to provide recom-

mended rations for any probable increase in livestock numbers plus a reserve to prevent disastrous liquidation of livestock following a poor crop year.

Dairying can expand by more attention to improved feeding and management rather than by increasing the number of milk cows. Emphasis on control of disease is also needed.

Beef cattle will continue to be one of the State's more important enterprises because of their ability as efficient users of low-grade roughage. Production per animal can be increased by better adjustment to the carrying capacity of pasture and range, by improved feeding and breeding, and by disease and pest control.

Swine production calls for increased efficiency of feeding and management rather than for increased numbers. More pasture, better disease control, and greater use of pig brooders would make more pork per litter. The "hybrids within a breed" now being developed give promise of lower-cost gains.

Poultry provides an important source of income over most of the State, although it is a major enterprise on only a few farms. More feed per hen, better breeding, more sanitation, and adequate housing can increase production without increase in numbers. Improved *turkey* breeding stock could add two pounds of meat per bird with no increase in feed. Some turkey producers may find opportunity in sale of hatching eggs.

Sheep are usually most numerous in Oklahoma when labor is abundant and cattle prices low. Increased grain feeding would permit marketing fat lambs rather than feeders when winter small-grain pasture is not available. Opportunity seems to lie in the direction of selling heavier lambs and increasing the percentage of lambs saved, rather than in increased numbers.

Number of Farms.

For the next few years at least, Oklahoma is likely to have about 150,000 farms as compared to 179,000 in 1940. The trend toward sharply reduced rural-farm population incident to the war probably is ended; but mechanization of farms can be expected to continue, with an accompanying increase in size of farms. Under conditions of full employment, many families will prefer to live on part-time farms, but these ordinarily do not affect quantity of farm products marketed.

Physical Resources

Soil, timber and grass resources have been dissipated by lack of proper management and by failure to control wind and water erosion and fire. Some losses still continue. *But the rate of loss has been reduced, and definite steps to avoid further losses are being taken.* The low point in care and handling of farm resources in Oklahoma definitely was passed in the 1930's.

Soils.

No state is more aware than Oklahoma of the need for soil conservation, and few if any are doing more about it. The general recommendation is for continuation and intensification of efforts now under way.

A statewide terracing program began about 1923, and some of the Nation's first large-scale soil conservation research was started in Oklahoma in 1929. This State had the first project under federal emergency conservation work in 1933; and after the federal Soil Conservation Service was established in 1935 the Oklahoma legislature at its first opportunity provided for establishment of soil conservation districts. About 90 percent of the State's land area is now within organized districts, and about 15 percent is under working agreements for soil improvement. Many individual farm operators and landowners are practicing conservation and fertility restoration measures on their own initiative with the help of county agents and vocational agriculture teachers, using small equipment such as is found on nearly every farm.

Soil surveys, showing existing production potentialities and needed restorative measures, have been made for more than 60 percent of the State's farm and ranch land. Survey work is being pushed to completion as rapidly as possible. The soils of Oklahoma vary widely, but as a whole are highly erodible. About one-fourth of the land in farms has been abandoned from cultivation because of low fertility due to erosion and to depletion by cropping. Lime and phosphorus are needed for maximum production on most of the *upland* soils in the eastern part of the State. Western Oklahoma soils are generally well supplied with these mineral plant foods. Throughout the State about one-third of the nitrogen and organic matter has been lost in less than fifty years of cultivation, the proportion varying in different areas.

The exact combination of appropriate soil-saving and soil-using practices will vary from farm to farm. For the State as a whole, permanently profitable use of soil resources requires a balanced system of cropping combined with livestock farming; and in many locations the same principle applies to individual farms. Lost organic matter and nitrogen must be restored to the soil through cropping systems employing legumes and grasses, and these crops can usually be most profitably marketed in the form of livestock. Establishment of legumes frequently will require prior application of lime and phosphate, particularly in central and eastern Oklahoma.

WATER.

Oklahoma includes within its borders almost every type of problem involved in the relation of water to agriculture. Average annual precipitation varies from more than 50 inches in the southeast to less than 18 in the western Panhandle. High seasonal variation in rainfall leads to corresponding variation in surface water supplies, creating problems of flood control and of storing water for use during dry periods. Loss of water by evaporation from plants is roughly 50 percent greater than in areas of corresponding rainfall further north. Many streams are polluted by domestic and industrial wastes or by natural mineralization from salt and gypsum beds.

Additional data are needed before a complete plan of water development can be worked out for Oklahoma. On the basis of present knowledge, the following steps seem desirable: Continuation of farm pond building; reduction of flood losses by a combination of dams and levees along stream channels with conservation treatment of uplands, and by cropping systems designed to escape months when floods are most probable; irrigation to supplement natural rainfall where water is available, especially west of the 98th meridian (U. S. Highway 81); and drainage in a few areas in eastern Oklahoma.

Agriculture shares with other occupations an interest in pollution abatement, malaria control, wildlife conservation along streams, and use of water resources for electric power.

MINERALS.

The farmer's most direct need for mineral products is for limestone to correct acidity, phosphates for improving low-phosphorus soils, and cement and stone for building construction and road-making. In addition, he shares with others an interest in developing within the State deposits of minerals which go into the manufactured products he buys.

Development of available deposits of stone for building and roadmaking would be helpful in farm building construction and rural road improvement. Agricultural limestone is readily available in most areas where it is needed. Some deposits of low-grade phosphate exist, but the economic feasibility of developing them appears questionable.

FORESTS.

Oklahoma has six million acres in woodlands, about one-third being on farms. With proper fire protection and management, growth rate could be increased five-fold on a large proportion of this area. Forest could be improved and wood-using industries strengthened by expansion of forest protection work, encouragement of longtime planting and management programs, reforestation, and improved management practices.

Agricultural Credit

The financial condition of Oklahoma farmers is today the best in many years. Farm debt is at a low level, and ample credit is available for sound agricultural expansion. Any farmer to whom credit would be truly useful can find a loan service closely approximating his needs. The favorable debt situation is further improved by the unusually large financial reserves in the hands of farmers.

The current need is for wise use of the credit and reserves available. The way these financial assets are used will have enormous influence in determining the condition of agriculture in coming years. The greatest potential danger lies in further bidding up the price of farm real estate. If current prices for farm products could be maintained for a long period, the burden of present high land values and the incidental debt load might not be disastrously heavy. But for agriculture as a whole the consequences would only be postponed. Continued high products prices would stimulate further land price increases until such time as commodity prices moderate or break, as they have broken after each major war.

Both borrowers and lenders will be ahead in the long run if the purchase price of farms and the proportion of mortgage debt are determined in the light of net farm income over a long period of ups and downs in production and prices. The mortgage repayment plan preferably should include the features of amortization and the privilege of advance or additional payment. It should be recognized that there is greater danger of excessive purchase price and over-mortgaging on small farms,

on those with poor soils, and on those located between good and poor soil areas, than on more productive units. Sellers of land may find protection in requiring substantial down payments so that the buyer is less likely to be forced to default. "G. I." loans should be assumed only when the ability of the borrower is known, when the farm is adequate in size and quality for the type of operation intended, and when the price is within the earning capacity of the land in those cases where the farm is to provide the veteran's major source of income.

Marketing and Distribution

Marketing and distribution facilities and procedure in Oklahoma have kept pace with agricultural production, and are on the threshold of extensive development. At present a large percentage of all raw agricultural products—with the exception of cotton lint, wool, hides, and peanuts—are processed within the State. However, farmers and non-farm business alike will benefit through increased development in these fields. Some important changes apparently are just ahead.

Price stabilization in some form may be desirable to prevent wide fluctuations in prices and bring more stability to farm income. Marketing margins affect the income share of farmers, therefore any reduction in the cost of marketing could be helpful in increasing farm income. Local assembling and transportation could be improved on a community or neighborhood basis to move the products of small-scale but efficient farmers to market in small lots. Extension and improvement of farm-to-market roads is especially needed.

Freight rates equalized on a cost-of-service basis are necessary to avoid subsidizing industries in the lower-rate areas at the expense of other areas. Standardization of products and prompt dissemination of market news are necessary if price is to be the regulator of the type of product wanted; and prices should accurately reflect differences in quality. Farm products should be processed within the State whenever it can be done as cheaply and effectively here as in other areas. Possible new uses of Oklahoma farm products need continuous attention.

Marketing channels are normally provided by individual enterprise, but marketing cooperatives are an alternative where satisfactory channels do not exist.

Land Tenure

The trend of land tenure in Oklahoma is toward a longer term of occupancy by the average farm operator. This represents a sound development in land management and will result in more effective conservation and utilization of soil and other agricultural resources.

The family farm is generally accepted as the basis of a stable, yet progressive, agriculture. Every "full-time" farm should therefore be large enough to give employment to the farm family and thus enable it to secure a satisfactory living. Census data indicate Oklahoma farms are increasing in size, but a large number report incomes below what is needed for a satisfactory standard of living.

The proportion of farms operated by tenants is high in Oklahoma, but is declining. Landlord-tenant relationships can be improved through leasing for periods of more than one year, partnership agreements, and a written plan for the farm worked out jointly by landlord and tenant. Such a plan would aim at combining the natural resources of the farm with the capital, labor and management of the operator so that over a period of years the best interest of both parties will be served. As the obligations and rights of tenants and landlords to each other and to the soil become more clearly defined, all tenure groups can participate more fully in programs of a longtime nature such as soil conservation.

Oklahoma can at the most provide farms for only about twenty-five thousand new farmers in the next few years. Numbers of farms can be economically expanded only if demand increases for those farm products requiring relatively larger amounts of labor. Any resettlement program must give careful consideration to the abilities of the prospective operator, the size of the farm unit, the existing type of farming in the area, and the danger of over-loaning at current land prices.

Rural Life and Community Organization

Rural community organization in Oklahoma is developing but has a long way yet to go to achieve the most satisfactory conditions for rural living. This applies to farm business organizations and to such institutions as schools, churches, and other social organizations. The opportunity for improvement of rural health facilities is quite apparent. The philosophy of self-development of rural people can be further encouraged.

Every influence that favors the establishment and maintenance of farm family units should be provided and cultivated. The economic machinery operating beyond the farm should be geared so as to promote rather than hinder the achievement and enrichment of farm family life.

Rural schools, in addition to fundamental training, should stress the dignity and importance of agriculture; and rural education should be organized increasingly toward the ideal of making the school the center of community life in secular affairs. The main immediate problem is one of providing more adequate support for primary and elementary education generally.

A great expansion of library service for rural people is urgently needed.

Preventable health losses can be largely reduced by providing more adequate, less expensive, and more readily available health facilities for general use. Rural counties in Oklahoma now have not more than one-fourth to one-half as many physicians as are needed. Not enough hospital beds are available to the general public at a price within their means.

Improvement of rural housing must stem from stabilization of farm purchasing power and more attention to putting an adequate share of the farm income to this use. Architectural and engineering aid is neded to incorporate safety, beauty, and convenience into farm home and farmstead layouts. Extension of low-cost electrical power is the first step toward many other home improvements.

Rural recreational programs are usually most successful when built around existing community centers such as the schools, churches, and clubs. Varied recreational activities, suitable for different groups, can be planned and sponsored by practically all rural organizations.

Better transportation and communication facilities are among the most vital requirements of improved rural social organization. Ideas, goods, and people must be able to move freely before the full benefits of rural life can be achieved.

Institutional rural religion is shifting slowly to town centers, leaving large numbers of religious people stranded in the open country without leadership or monetary assistance. Other large numbers are without religious attachments. So

far as possible, religious organizations should conform to habitual population groupings, being enlarged geographically as transportation becomes easier.

Farmers, as a minority group (even though a large one), have an interest in preserving democratic freedoms and processes of government.

Agricultural leadership recruitment must be developed, to discover and move to action those who can help farm people do for themselves what they need to have done. This can be forwarded by study and discussion groups on farm problems; emphasis on principles of voting, office holding, and group responsibility in junior and adult club activity; and focusing programs of rural churches and other organizations more directly on the problems and opportunities of rural leadership.